

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONTROL MINOR PERMIT

Permit No. AQ0267MSS02
Rescinds Permit No. AQ026701 Revision 1

Date – Final November 13, 2006

The Department of Environmental Conservation, under the authority of AS 46.03, AS 46.14, 6 AAC 50, 18 AAC 15 and 18 AAC 50, issues this Air Quality Control Minor Permit to:

Owner(s): ConocoPhillips Alaska, Inc.
BP Exploration (Alaska), Inc.
ExxonMobil Alaska Production, Inc.
Union Oil Company of California

Operator: ConocoPhillips Alaska, Inc.
P.O. Box 100360
Anchorage, AK 99510-0360

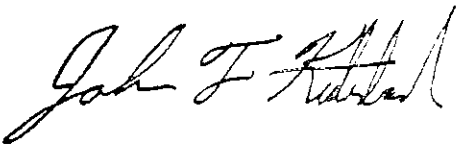
Stationary Source: DS1E & DS1J portion of Kuparuk Central Production Facility #1

Location: Section 16 & 21 (DS1E) Section 35 (DS1J)
Township 11N, Range 10E, Umiat Meridian

Physical Address: Kuparuk River Unit

Permit Contact: Tom Manson (907) 263 4627

This permit authorizes the Permittee to revise permit terms and conditions of Minor Permit No. AQ0267MSS01 Revision 1 in accordance with the terms and conditions of this permit, and as described in the original permit application and subsequent application supplements listed in Section 6, except as specified in this permit.



John F. Kuterbach, Manager
Air Permits Program

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List of Abbreviations Used in this Permit

AAC.....	Alaska Administrative Code
AS	Alaska Statutes
bbl	1 barrel oil = 42 US gal.
bhp	brake horsepower or boiler horsepower ¹
C.F.R.....	Code of Federal Regulations
CO.....	Carbon Monoxide
dscf.....	Dry standard cubic feet
DS1E.....	Drill site 1E
DS1J.....	Drill site 1J
EPA.....	US Environmental Protection Agency
gal/day	gallons per day
gal/yr	gallons per year
gr./dscf	grain per dry standard cubic feet (1 pound = 7000 grains)
ID	Emission Unit Identification Number
MMBtu	Million British Thermal Units
MMscf	Million Standard Cubic Feet
NRE	Non-road Engine
NO _x	Oxides of Nitrogen
ppm	Parts per million
ppmv	Parts per million volume
PSD.....	Prevention of Significant Deterioration
SO ₂	Sulfur dioxide
scf.....	Standard Cubic Feet
tpy	Tons per year
VOC.....	volatile organic compound [as defined in 18 AAC 50.990(103)]

¹ 1 boiler horsepower = 33,472 Btu-fuel per hp-hr divided by the boiler's efficiency. 1 brake hp = 7000 Btu-fuel per hp-hr.

Section 1. Authorization

1. The Permittee is authorized to install and operate the generic emission units listed in Section 5, Table 1 and Table 2.
2. If permit terms and conditions in this permit conflict with other previous permits, comply with terms and conditions of this permit.

Ambient Air Boundary

3. The Permittee shall establish an ambient air boundary exclusion zone around each drill site during Post-Construction² Drilling as follows.
 - 3.1 For DS1E establish a rectangular zone of the following dimensions: 1,020 meters east to west and 1,410 meters north to south, with the west side approximately 395 meters from the northwest corner of DS1E and the north side approximately 480 meters from the northwest corner of DS1E.
 - 3.2 For DS1J establish a rectangular exclusion zone of the following dimensions: 970 meters east to west and 1,320 meters north to south, with the west side approximately 445 meters from the southwest corner of DS1E and the south side approximately 350 meters from the southwest corner of DS1E.
 - 3.3 Control public access within the zones listed in conditions 3.1 and 3.2 for the periods when drill rigs are present and are in operation.
 - 3.4 Control public access within the coastal zones listed in conditions 3.1 and 3.2 during Post-Construction Drilling Operations when drill rigs are operational. For all other periods, the ambient air boundary is the edge of the developed pads, and the requirements of conditions 3 and 4 do not apply.
4. The Permittee shall prohibit public access within any ambient air boundary established under condition 3. To prevent public access:
 - 4.1 During periods of active drilling, post the area with lighted signs printed in English and Inupiat that say *Warning Restricted Access, Air Quality Exclusion Zone, Authorized Personnel Only, Please Check in with the Drilling Supervisor*. Place at least three signs along each side of the ambient air boundary, spaced no more than 300 meters apart. Place one sign adjacent to the road leading to the well pad at the ambient air boundary. The Permittee may use reflective signs in lieu of lighted signs if they are clearly visible during low-light conditions and present no hazard to the public.
 - 4.2 Maintain surveillance over the exclusion zone sufficient to ensure that the public is excluded. In addition to the provisions of condition 4.1, follow the surveillance plan in Section 4.

² Post construction drilling operations are activities that the air quality impact analysis has shown requires an exclusion zone after two years of Construction Drilling (see footnote 3) Operations.

Limits to Protect Ambient Air Quality and Avoid Classification as PSD Major

5. Limit total NO_x emissions from Units C-2101A, C-2101B and C-2101C to no greater than 824 tons per 12 consecutive month period. Monitor record and report NO_x emissions, as described in Operating Permit No. 267TVP01.
6. When operating additional equipment at DS1E and DS1J greater than 400 hp or equivalent firing rate, that was not accounted for in the March 2005 permit application modeling analysis, the Permittee shall notify the Department's Air Permits Program, Attention—Supervisor Construction Permits, 410 Willoughby Avenue Suite 303, Juneau, AK 99801, or by facsimile (907) 465-5129.
7. Document the date on which Construction drilling³ commenced, is completed, and when Post Construction drilling² commences and is completed for DS1E and DS1J.
8. During the first twenty-four months after commencement of Construction drilling operations at either Drill Sites 1E or 1J, limit the combined fuel use of the drill rig engines listed in Section 5, Table 1 to no greater than 3,159,000 gallons per 12 consecutive month period.
9. Twenty-four months after drill rig operations have commenced at either Drill Sites 1E or 1J, limit combined fuel use of the drill rig engines listed in Section 5, Table 1 to no greater than 316,200 gallons per 12 consecutive month period and to no greater than 5,170 gallons per day.⁴
10. Limit combined fuel use per 12 consecutive month period for units listed in Table 1, Section 5 as follows:
 - 10.1 Drill rig heaters and boilers, to no greater than 1,476,000 gallons;
 - 10.2 Drill rig camp engines to no greater than 54,400 gallons;
 - 10.3 Well service heaters to no greater than 200,000 gallons;
 - 10.4 Well service engines to no greater than 177,800 gallons; and
 - 10.5 Well frac unit engines to no greater than 50,000 gallons.
11. Monitor and record the total daily fuel use for the drill rig engines subject to daily fuel use limit in condition 9. Monitor and record the monthly fuel use for each group of emission units subject to 12 consecutive month fuel use limits in conditions 8, 9, 10.1, 10.2, 10.3, 10.4, and 10.5. The fuel use may be estimated by measurement techniques and calculations

³ Construction drilling operations are defined as the initial two years of drilling and construction occurring at DS1E and DS1J.

⁴ In order not to conflict with the operating limit in Condition 8, the consecutive 12-month operating limit under Condition 9 does not apply to hours of operation during the first 24 months after commencement of drill rig operations at either DS1E or DS1J.

approved by the department. Report the maximum total daily fuel use for each month for the drill rig engines and monthly total fuel use for each group of emission units in the operating report described in the Operating Permit No. 267TVP01.

12. Limit combined daily fuel use for units listed in Table 1, Section 5 as follows:
 - 12.1 Well service heaters and engines to no greater than 2,700 gallons⁵; and
 - 12.2 Well frac unit engines to no greater than 20,100 gallons².
 - 12.3 Monitor and record the daily fuel use for each group of emission units subject to daily fuel use limits in conditions 12.1 and 12.2. The fuel use may be estimated by measurement techniques and calculations approved by the department. Report the maximum daily fuel consumption for each month with the operating report described in the Operating Permit No. 267TVP01.
13. Limit the gas burned in the portable flare to no more than
 - 13.1 16.2 million standard cubic feet (MMscf) per twelve consecutive month period and
 - 13.2 150,000 standard cubic feet (scf) per day.
 - 13.3 Monitor and record the daily fuel burned by measurement techniques and calculations approved by the department. Report the maximum daily fuel burned for each month in compliance with condition 13.2 and monthly total fuel burned in compliance with condition 13.1 in each operating report described in the Operating Permit No. 267TVP01.

Limits to Avoid Classification as PSD Major

14. The Permittee shall limit the combined total heat input rating of the production heaters listed in Table 2 to no more than 184 MMBtu/hr heat input rate. Report the make, and rating of each production heater⁶ in the next operating report described in the Operating Permit No. 267TVP01, following initial startup of each unit.
15. The Permittee shall not burn fuel oil with sulfur content greater than 0.150 percent sulfur by weight and field gas with hydrogen sulfide (H₂S) no greater than 275 ppmvd at DS1E and DS1J.
 - 15.1 Monitor, record and report in accordance with fuel oil sulfur monitoring and fuel gas H₂S monitoring requirements described in Operating Permit No. 267TVP01.

⁵ Cumulative total for the Make/Model indicated. To obtain the cumulative total limit for each emission unit group add together the totals for each make/model within the emission unit group.

⁶ At the time of this permit decision CPAI has not specified a manufacturer, make or model of the new production heaters.

- 15.2 Report under Excess Emissions and Permit Deviations Reports of Operating Permit No. 267TVP01 if anytime the fuel sulfur determined under condition 15.1 exceeds the limit in condition 15.
16. The Permittee shall limit combined sulfur dioxide (SO₂) emissions from the drill rig heaters and boilers (Table 1, Section 5) and the production heaters and portable flare (Table 2, Section 5) to no greater than 35 tons per 12 consecutive month period.
- 16.1 For the drill rig heaters, calculate and record the total SO₂ emissions from the drill rig heaters and boilers for each calendar month using monthly fuel oil use measured in condition 11 and fuel sulfur content measured in condition 15.1. If the fuel use records are missing or incomplete for any unit, calculate SO₂ emissions based on operating hours and maximum design fuel use rates.
- 16.2 For the production heaters, monitor and record the monthly fuel gas consumption. Calculate and record the total SO₂ emissions from the production heaters for each calendar month using fuel consumption and fuel sulfur content measured in condition 15.1. If the consumption records are missing or incomplete for any emission unit, estimate SO₂ emissions based on operating hours and maximum design fuel consumption rates.
- 16.3 For the portable flare, calculate and record SO₂ emissions for each calendar month from the amount of fuel gas combusted in condition 13.3 and fuel H₂S content.
- 16.4 Calculate and record the 12 consecutive month SO₂ emissions from the drill rig heaters, production heaters and portable flare.
- 16.5 Report the 12 consecutive month SO₂ emissions for the drill rig heaters, production heater and the portable flare. If the emission units operation has not yet approached 12 months, list the cumulative emissions of the unit as a substitute for compliance with the 12-month rolling total emission limit.
17. Limit temporary crude oil storage tank VOC emissions at DS1E and DS1J to a combined total no greater than 34 tons per 12 consecutive month period.
- 17.1 Record the following information, when sending live crude oil to temporary crude oil storage tank(s), to monitor the venting of VOCs from the temporary crude oil storage tank(s):
- date and time that venting began and ended;
 - event description (well name, type of activity, etc.);
 - description of fluids introduced to the temporary crude oil storage tank(s);
 - volume of liquid accumulated in the temporary crude oil storage tank(s);

- e. estimated percentage of live crude oil in the total liquid volume accumulated in the temporary crude oil storage tank(s);
- f. estimated volume of gas vented;
- g. estimated tonnage of VOCs vented;
- h. operational comments and/or assumptions used for estimated volumes reported in 17.1d and 17.1g.

17.2 Estimate the monthly tonnage of total VOC emissions from the temporary crude oil storage tank(s) at DS1E and DS1J as follows, or use an alternate method approved by the department:

- a. Estimate the percentage of live crude oil and crude composition in formation fluids by:
 - (i) using well test results, or
 - (ii) using reservoir data and/or centrifuge results.
- b. Estimate the volume of live crude oil that goes to temporary crude oil storage tank(s) by:
 - (i) estimating the volume of total fluids that are captured in the temporary crude oil storage tank(s);
 - (ii) estimating the volume of fluids pumped down hole;
 - (iii) estimating the volume of total fluid initially contained in the well bore;
 - (iv) estimating the volume of live crude oil that is initially contained in the well bore;
 - (v) subtracting the volumes estimated in 17.2b(ii) and 17.2b(iii) from the volume estimated in 17.2b(i) and multiplying by the percentage of live crude oil determined in 17.2a; use zero for the result if the volume in 17.2b(ii) is greater than the volume in 17.2b(i);
 - (vi) adding the volume in 17.2b(iv) to the volume in 17.2b(v); the result is the volume of live crude oil. Use the volume in 17.2b(i) if the volume in 17.2b(iv) is greater than the volume in 17.2b(i).
- c. Use HYSYS®, PROSIM®, or a similar tool approved by the department to estimate the VOC content of flashed gases (including lift gas if used):
 - (i) the Permittee shall document the equation of state and oil characterization parameters used to estimate the VOC content;

(ii) the Permittee shall use the tool identified in 17.2c for estimating VOC flashing losses from fluids that go to the temporary crude oil storage tank(s).

- d. If a separator is used, monitor the separator pressure, temperature and liquid flow rate on an hourly basis when flowing fluids to temporary crude oil storage tank(s).
- e. If a flare is used, the Permittee shall estimate the total volume of gas routed to the flare using the flowback data determined under condition 17, and estimate monthly VOC emissions using a department approved emission factor.

17.3 The Permittee shall report with each operating report described in the Operating Permit No. 267TVP01:

- a. the monthly VOC emissions estimated in condition 17.2 at 1E and 1J and the 12 consecutive month VOC emissions, for each calendar month in the reporting period;
- b. the input and output from simulation models and software; and
- c. all calculations and assumptions used.

Section 2. State Emission Standards

Visible Emissions

18. Except for non-road engines, the Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from fuel burning equipment and industrial process authorized under condition 1, to reduce visibility through the exhaust effluent by any of the following
- a. more than 20 percent for a total of more than three minutes in any one hour;
 - b. more than 20 percent averaged over any six consecutive minutes.⁷
- 18.1 For each rig camp engine not meeting the definition of NRE, and that combusts more than 13,500 gallons of fuel per consecutive 12 month period, perform periodic visible emissions observations in accordance with Visible Emissions Monitoring and Reporting for engines in the Operating Permit No. 267TVP01.
- 18.2 For each drill rig boiler and heater, certify compliance status for the opacity standard in each Annual Compliance Certification of the Operating Permit No. 267TVP01.
- 18.3 For the production heaters, burn only gas. Certify in each Annual Compliance Certification of Operating Permit No. 267TVP01 whether each of these units fired only gas.
- 18.4 For the portable flare, conduct an initial visible emission evaluation within 90 days of initial flaring event⁸. Report observations in the concurrent operating report of Operating Permit No. 267TVP01. Perform periodic visible emissions observations in accordance with Visible Emissions Monitoring and Reporting of Operating Permit No. 267TVP01 for flares.

Particulate Matter

19. Except for non-road engines, the Permittee shall not cause or allow particulate matter emitted from fuel burning equipment and industrial process authorized under condition 1, "*Temporary Authorization*," to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

⁷ For purposes of this permit, the "more than three minutes in any hour" criterion will no longer be effective when the Air Quality Control (18 AAC 50) regulation package effective May 3, 2002 is adopted by the U.S. EPA. The six-minute average standard is enforceable only by the state until 18 AAC 50.055(a)(1), dated May 3, 2002, is approved by the U.S. EPA into the SIP at which time this standard becomes federally enforceable.

⁸ For purposes of this permit, a "flare event" is flaring of gas for greater than one hour as a result of scheduled release operations, i.e. maintenance or well testing activities. It does not include non-scheduled release operations, i.e. process upsets, emergency flaring, or de minimis venting of gas incidental to normal operations.

- 19.1 For the rig camp engines at DS1E and DS1J, monitor in accordance with Particulate Matter Monitoring and Reporting for Liquid Fuel Fired Turbines and Engines as described in Operating Permit No. 267TVP01.
- 19.2 For the production heaters at DS1E and DS1J, monitor in accordance with condition 18.3.
- 19.3 For each drill rig boilers and heaters, certify compliance status with the particulate matter standard in each Annual Compliance Certification of the Operating Permit No. 267TVP01.

Sulfur Compound Emissions

20. Except for non-road engines, the Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from fuel burning equipment and industrial processes authorized under condition 1, to exceed 500 ppm averaged over three hours. Ensure compliance with this requirement by complying with condition 15.

Section 3. Emission Fees

- 21.** In addition to the assessable emission fees required in Operating Permit No. 267TVP01, the Permittee shall pay to the Department annual emission fees based on the assessable emissions for the equipment authorized by this construction permit, as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410. The Department will assess fees per ton of each air contaminant that the equipment authorized by this permit emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of

- 21.1 the authorized equipment's assessable potential to emit of 1013⁹ tpy; or
- 21.2 the authorized equipment's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the department, when demonstrated by
 - a. an enforceable test method described in 18 AAC 50.220;
 - b. material balance calculations;
 - c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or
 - d. other methods and calculations approved by the department.

- 22.** Emission fees for the equipment authorized by this construction permit will be assessed as follows:

- 22.1 no later than March 31 of each year, the Permittee may submit an estimate of the authorized equipment's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or
- 22.2 if no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the authorized equipment's potential to emit set out in condition 21.1.

⁹ From permit application, March 2005 Table 4-1 includes emissions from all emission units including NREs

Section 4. *Public Access Control Plan for Ambient Air Boundaries*

The following control plan is for prohibiting public access within the ambient air boundary established under condition 3. The area where public access is prohibited under condition 3 is not considered to be ambient air.

Background:

Previous Alaska Department of Environmental Conservation (ADEC) Air Quality Construction Permits for North Slope drilling operations have called for preparation and submission of a surveillance plan associated with the air exclusion zones that will be utilized by CPAI for drilling operations.

Sign Construction and Placement:

CPAI proposes to utilize signs that are either lighted or have been constructed of reflective material.

Place at least three signs along each side of the ambient air boundary, spaced no more than 300 meters apart. Place one sign on the road leading to the pad at the junction of the road and ambient air boundary.

Surveillance Plan Personnel:

CPAI will utilize heavy equipment drivers, the roustabout crews, security, operations, and technicians from subcontractors to perform surveillance duties.

Additionally, all on-site personnel will be informed of the air permitting requirements to maintain an exclusion zone at the location. All personnel will be asked to maintain an exclusion zone at the location. All personnel will be asked to observe the location perimeter as they conduct their regular duties. Any suspected violation of the exclusion zone by unauthorized personnel shall be immediately reported to Security by the observing party. The Security will respond as described by the surveillance individual under the Surveillance Actions in addition to any necessary action.

Surveillance Actions:

The designated surveillance personnel will be required to observe the area between the pad edge and the edge of the exclusion zone for at least once per day. The surveillance personnel will log the time and date of the location patrol. These logs will be recorded on the attached form. These completed forms will be maintained on location in the CPAI rig supervisor's office or in another on-site location designated by the CPAI rig supervisor.

If the surveillance individual encounters unauthorized personnel in the air exclusion zone, the following steps will be taken by that individual:

- A. Approach the unauthorized person (or persons) and request that they leave the exclusion zone immediately.
- B. If the unauthorized individual(s) refuse to leave the exclusion zone area after the above request, they will be informed that
 - a. They are subjecting themselves to an area where national ambient air quality standards may not be met
 - b. State regulations require CPAI to restrict entry to the posted area to authorized personnel only; and
 - c. The unauthorized person or persons will again be asked to leave the exclusion zone area.
- C. If the unauthorized individual(s) still refuse to leave, they will be informed that neither CPAI nor any State agency will be liable or responsible for any harm they may encounter by being in a restricted entry area. The surveillance individual will also request the name or names of the unauthorized personnel at that time. The surveillance individual will then log the encounter with the unauthorized person or persons on the surveillance form. The data to be logged in such a situation will include:
 - a. The name of the individual (if known or otherwise provided)
 - b. The method of entry into the exclusion zone (e.g., by foot, snow machine, etc.)
 - c. Duration of unauthorized presence within the exclusion zone
 - d. Other pertinent information as appropriateThe surveillance individual will also report such incidents to the CPAI rig supervisor or their designated alternate for such purposes at the next available opportunity.
- D. If unauthorized personnel entry into the exclusion zone poses safety concerns due to operational activities, (e.g. the person or persons are approaching the test flare during operation, etc.), the CPAI rig supervisor, shall immediately be contacted by the surveillance individual. Actions will then be taken as deemed appropriate by the CPAI rig supervisor.
- E. CPAI will include summary information regarding any exclusion zone violations in the operating report described in Section 12 of Operating Permit No. 267TVP01.
- F. The completed surveillance forms will be maintained on location until completion of the operation. At that time, all completed forms should be sent to CPAI's Kuparuk Field Environmental Compliance Coordinator for maintenance (Leigh McDaniel/Jeff Smith, Internal Mail Address NSK 61, Phone: 659-7542). All completed forms will be maintained for a period of one year after the completion of operations unless otherwise requested by the ADEC.

Air Exclusion Zone

Surveillance Monitoring Form
(please complete one form for each calendar day of operations)

Date: _____

Pad Surveillance

Surveillance

Trip# & Time

done by _____

Comments _____

Note: Pad surveillance must be performed at least once per day during operations.

Section 5. Emission Unit Inventory

Table 1. Generic Transportable Drilling Operation Emission Unit Inventory^{10,11}

Equipment Type	Equipment Use	Description ¹¹	Rating ¹²
Drill Rig Engines¹³			
Generators	Primary/Transition/ Standby Reserve Power	Caterpillar D399/D399TA	900-976 kW
Drill Rig Boilers and Heaters			
Boilers	Rig Boilers (2 Units)	Kewanee/Cleaver Brooks	93-100 bhp
Heaters	Rig Air Heaters (2 Units)	Tioga	4.2
Pad Support Equipment			
Generators	Rig Camp Power Generators (24 Units)	Caterpillar 379TA	379 kW
Well Service and Frac Equipment			
Heater	Coil Tubing Unit Heater	Unknown	10 MMBtu/hr
Engines	Coil Tubing Unit Engines	IC Engines <600 hp	60-655 hp
Engines	Small Frac Unit Engines	IC Engines <600 hp	120 hp
Engines	Large Frac Unit Engines	IC Engines > 600 hp	190-14,400

Table 2. Permanent Operations Emission Unit Inventory⁹

Unit	Equipment Use	Description	Rating
Heaters – Gas Fired	DS1E and DS1J Production Heaters	Unknown	184 MMBtu/hr
Portable Flare	Well Flow Back VOC Control	Unknown	16.2 MMscf/yr

¹⁰ These emission units have specific monitoring, recordkeeping and reporting requirements.

¹¹ These emission units are generic and are intended to conservatively represent the emission unit inventories of individual transportable drilling operations, one or more of which may operate concurrently within DS1E and DS1J.

¹² The ratings are only for the purpose of identification.

¹³ The drill rig engines are NREs regulated under Title II of the CAA. The department has determined that the listed NREs required operational restrictions to protect ambient air quality.

Section 6. Permit Documentation

September 22, 2003	Letter from Tom Damiana, SECOR, to Jim Baumgartner, ADEC, submitting the DS1J Modeling Protocol.
October 22, 2003	Letter from Alan Schuler, ADEC, to Tom Damiana, SECOR, regarding approval of DS1J Modeling Protocol.
December 2, 2003	Letter from Thomas Manson, CPAI, to Jim Baumgartner, ADEC, submitting the construction permit application.
December 15, 2003	Letter from Tom Damiana, SECOR, to Jim Baumgartner, ADEC, submitting revised Section 5 Tables.
December 31, 2003	Memo from William Ashton, ADEC, to Steven Schmitz, ADNR, asking ADNR to approve the exclusion zone requested by CPAI.
January 20, 2004	Letter from Thomas Manson, CPAI, to Jim Baumgartner, ADEC, submitting a revised surveillance plan for the air exclusion zone around the drill sites.
January 26, 2004	Memo from William Ashton, ADEC, to Steven Schmitz, ADNR, asking ADNR to approve the revised exclusion zone requested by CPAI.
February 6, 2004	Letter from Tom Damiana, SECOR to William Ashton, ADEC, submitting amendment to the application for permanent pad operations (heaters only) with no exclusion zone.
March 25, 2005	Letter from Thomas Manson, CPAI, to Bill Walker, ADEC, submitting minor permit application to revise construction permit No. 267CP02.
November 3, 2005	Letter from Terry Lucht to ADEC requesting an Administrative Revision to Permit No. AQ0267MSS01.
March 24, 2006	Issue of Permit No. AQ0267MSS01 Revision 1 to CPAI.
June 16, 2006	Letter from Thomas Manson, CPAI to ADEC. Permit application to revise Permit No. AQ0267MSS01 Revision 1.